

PAT-NO: JP410193808A

DOCUMENT-IDENTIFIER: JP 10193808 A

TITLE: THERMAL TRANSFER RECEIVING SHEET

PUBN-DATE: July 28, 1998

INVENTOR-INFORMATION:

NAME

SHIMIZU, YUUKO

KUBO, NAOKI

TOMIKANEHARA, MASAHIRO

HAYASHI, SHIGEO



ASSIGNEE-INFORMATION:

NAME

COUNTRY

OJI PAPER CO LTD

N/A

APPL-NO: JP09003694

APPL-DATE: January 13, 1997

INT-CL (IPC): B41M005/38, B32B005/24 , B32B007/02 , B32B027/28 , B41M007/00

ABSTRACT:

PROBLEM TO BE SOLVED: To make possible to divide into multiple parts neatly easily without using a tool such as a scissors by providing perforations intended for separating mount sections on the mount, and treating them as small pieces of paper where receiving sections and mount sections are laminated.

SOLUTION: In providing perforations to a mount 7 so that they may superpose on half cuts of a receiving section 4, perforations 3 for separating mount sections 7 are provided so that the number of the mount sections 7 may be the same as or smaller than the number of separable and usable sections of the

receiving parts 4 and their areas may be the same as or larger than the areas of separable and usable sections of the receiving section 4. And then, by separating by the perforations 3, the receiving section 4 and the mount sections 7 are treated as small pieces of paper. Printing can be made without trouble, and after printing, the sheet can be separated into multiple pieces of paper without using scissors or a knife.

COPYRIGHT: (C)1998,JPO

(19) 日本国特許庁 (J P)

(12) 公開特許公報 (A)

(11) 特許出願公開番号

特開平10-193808

(43) 公開日 平成10年(1998) 7月28日

(51) Int.Cl. <sup>8</sup>	識別記号	F I
B 4 1 M 5/38		B 4 1 M 5/26 1 0 1 H
B 3 2 B 5/24	1 0 1	B 3 2 B 5/24 1 0 1
7/02	1 0 4	7/02 1 0 4
27/28	1 0 1	27/28 1 0 1
B 4 1 M 7/00		B 4 1 M 7/00
審査請求 未請求 請求項の数 6 O L (全 7 頁)		

(21) 出願番号 特願平9-3694

(22) 出願日 平成9年(1997) 1月13日

(71) 出願人 000122298

王子製紙株式会社  
東京都中央区銀座4丁目7番5号

(72) 発明者 清水 タ子

東京都江東区東雲1丁目10番6号 王子製  
紙株式会社東雲研究センター内

(72) 発明者 久保 直樹

東京都江東区東雲1丁目10番6号 王子製  
紙株式会社東雲研究センター内

(72) 発明者 富金原 正裕

東京都江東区東雲1丁目10番6号 王子製  
紙株式会社東雲研究センター内

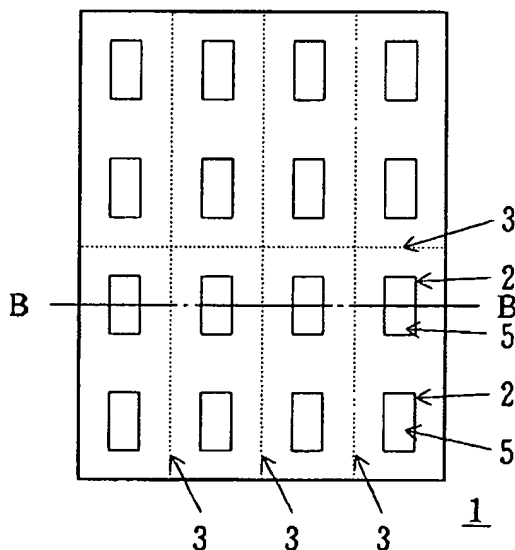
最終頁に続く

(54) 【発明の名称】 熱転写用受容シート

(57) 【要約】

【課題】熱転写方式、特に昇華型熱転写記録方式に適した熱転写用受容シートにおいて、プリント後は受容シートをはさみ等の道具を用いずに、容易に且つ綺麗に複数に分割できる熱転写用受容シートを提供する。

【解決手段】支持体の表面に受容層を有する受容部、該受容部の裏面に受容部を保持するための台紙部を有し、受容部と台紙部とは剥離可能な状態で積層され、且つ受容部が複数に分離できるようにハーフカットが施され、プリント後に受容部を複数に分離して使用する熱転写用受容シートにおいて、台紙部が受容部の分離使用可能な数と同数以下、且つ、受容部の分離使用する面積と同一以上の面積となるように、台紙部分離用のミシン目を具備し、該ミシン目により分離することにより、受容部と台紙部を積層した小シート片として取り扱うことができることを特徴とする熱転写用受容シートである。



## 【特許請求の範囲】

【請求項1】支持体の表面に受容層を有する受容部、該受容部の裏面に受容部を保持するための台紙部を有し、受容部と台紙部とは剥離可能な状態で積層され、且つ受容部が複数に分離できるようにハーフカットが施され、プリント後に受容部を複数に分離して使用する熱転写用受容シートにおいて、台紙部が受容部の分離使用可能な数と同数以下、且つ、受容部の分離使用する面積と同一以上の面積となるように、台紙部分離用のミシン目を具備し、該ミシン目により分離することにより、受容部と台紙部を積層した小シート片として取り扱うことができることを特徴とする熱転写用受容シート。

【請求項2】受容部と台紙部の剥離可能な状態の積層が、台紙部が剥離シートであり、粘着剤を介して受容部を積層する構成である請求項1記載の熱転写用受容シート。

【請求項3】受容部の支持体、台紙部の支持体の少なくとも一方がフィルムまたは合成紙である請求項1又は請求項2記載の熱転写用受容シート。

【請求項4】台紙部のミシン目が、受容部のハーフカットと重なる請求項1～3の何れか一項に記載の熱転写用受容シート。

【請求項5】台紙部のミシン目が、受容部の分離用のハーフカットとは重ならず、受容部まで貫通するミシン目である請求項1～3の何れか一項に記載の熱転写用受容シート。

【請求項6】台紙部のミシン目が、受容部の分離用のハーフカットとは重ならず、台紙部のみのミシン目である請求項1～3の何れか一項に記載の熱転写用受容シート。

## 【発明の詳細な説明】

## 【0001】

【発明の属する技術分野】本発明は、熱転写方式、特に昇華型熱転写記録方式に適した熱転写用受容シートに関する。更に詳しく述べるならば、プリント後はミシン目に沿って受容シートをはさみ等の道具を用いずに、容易に且つ綺麗に複数に分割できる熱転写用受容シートに関する。

## 【0002】

【従来の技術】近年、熱転写方式のカラーハードコピー、特に鮮明なフルカラー画像が得られる昇華型熱転写方式のプリンター開発が急速に進んでいる。昇華型熱転写プリンターでは、3色（イエロー、マゼンタ、シア）あるいは4色（イエロー、マゼンタ、シア、ブラック）の昇華染料層を含むリボンを順番にサーマルヘッドの加熱エネルギーを連続的に制御して加熱し、それぞれの染料の転写量を変化させることにより、濃度階調のフルカラー画像の転写形成が可能となっている。このような受容シートは、フルカラー記録、デジタル画像のプリントなど様々な用途が期待されているが、昇華型熱転

写の場合、リボンと受容シートの大きさがプリンターに依存しており、同一プリンターではシートの大きさを自由に変更することができない。

## 【0003】

【発明が解決しようとする課題】しかし、デジタル処理や、プリンターの機能により、画像を任意に分割することができ、例えば2分割、4分割や16分割プリント、あるいはハーフカット処理された分割シール等が注目されているが、プリント後はさみ等で任意の大きさに切らなければ受容シートを分けることが出来なかった。

## 【0004】

【課題を解決するための手段】本発明者等は、このような状況に鑑み、鋭意研究の結果、少なくとも受容部と台紙の2層以上有する熱転写用受容シートにおいて、少なくとも台紙に任意のミシン目を有することによって、プリント後、わざわざはさみやカッターナイフなどの道具を用いず容易に綺麗に複数に分割することを可能にした。上記のようにミシン目に沿って受容シートを複数に分けられることによって、例えば分割画面がプリントされた受容シートや受容タックシートを何の道具も用いずに、綺麗に容易に複数の人間に分けたりすることが可能となる。

【0005】（1）本発明は、支持体の表面に受容層を有する受容部、該受容部の裏面に受容部を保持するための台紙部を有し、受容部と台紙部とは剥離可能な状態で積層され、且つ受容部が複数に分離できるようにハーフカットが施され、プリント後に受容部を複数に分離して使用する熱転写用受容シートにおいて、台紙部が受容部の分離使用可能な数と同数以下、且つ、受容部の分離使用する面積と同一以上の面積となるように、台紙部分離用のミシン目を具備し、該ミシン目により分離することにより、受容部と台紙部を積層した小シート片として取り扱うことができることを特徴とする熱転写用受容シートである。

【0006】本発明の構成は、積層に粘着剤を用いることにより、シールやステッカーとして有用な構成となる。

（2）受容部と台紙部の剥離可能な状態の積層が、台紙部が剥離シートであり、粘着剤を介して受容部を積層する構成である（1）記載の熱転写用受容シートである。

【0007】受容部の支持体又は台紙部の支持体の少なくとも一方がフィルム、又は合成紙であると、プリンター内部などでのミシン目部分よりの意図とせぬ破れが生じなくなるので特に好ましい構成となる。

（3）受容部の支持体、台紙部の少なくとも一方がフィルムまたは合成紙である（1）又は（2）記載の熱転写用受容シート。

【0008】更に、受容部のハーフカットと、台紙部のミシン目との関係について研究を重ねた結果、次に挙げる構成が極めて実用的であり、安定した画像記録が行え

るので好ましい構成となる。

(4) 台紙部のミシン目が、受容部のハーフカットと重なる(1)～(3)の何れかに記載の熱転写用受容シートである。

(5) 台紙部のミシン目が、受容部の分離用のハーフカットとは重ならず、受容部まで貫通するミシン目である(1)～(3)の何れかに記載の熱転写用受容シートである。

(6) 台紙部のミシン目が、受容部の分離用のハーフカットとは重ならず、台紙部のみのミシン目である(1)～(3)の何れかに記載の熱転写用受容シートである。

【0009】

【発明の実施の形態】本発明は、支持体の表面に受容層を有する受容部、該受容部の裏面に受容部を保持するための台紙部を有し、受容部と台紙部とは剥離可能な状態で積層され、且つ受容部が複数に分離できるようにハーフカットが施され、プリント後に受容部を複数に分離して使用する熱転写用受容シートにおいて、台紙部が受容部の分離使用可能な数と同数以下、且つ、受容部の分離使用する面積と同一以上の面積となるように、台紙部分分離用のミシン目を具備し、該ミシン目により分離することにより、受容部と台紙部を積層した小シート片として取り扱うことができることを特徴とする熱転写用受容シートである。

【0010】ここでいうハーフカットとは、従来シール等で使用されている切り込み方法であって、本発明の熱転写用受容シートにおいては、受容部側より切り込みをいれ、その切り込みは台紙部を貫通していないものをいう。切り込みの一部分に非切断部分を有してもかまわない。本発明の熱転写用受容シートは、ハーフカットにより、受容部を任意の形状、個数に分離して使用することができ、なおその大きさや、個数、またハーフカットの切り込みの深さなどは特に限定されない。

【0011】一方、ミシン目は、受容部の分離使用する部分を積層した状態で、台紙部からはさみなど使うことなく容易に分離できる切り込み加工であればよく、例えば、従来公知のミシン目状、点線状、或いはこれに類似した切り取り線をいう。ミシン目の配列間隔、大きさなどは特に限定しない。またミシン目を二列に配置しても構わない。本発明は、このミシン目を受容部の分離使用可能な数と同数以下に、且つ、受容部の分離使用する面積と同一以上の面積となるように施すことが特徴である。具体的には、次にあげるような構成であるが、特にこれらに限定するものではない。

【0012】例えば、図1および図2に示すような、受容部のハーフカットと重なるように台紙部にミシン目加工を施すことができる。この場合、台紙部は受容部の分離使用可能な数と同数であり、受容部の分離使用する面積と同一のミシン目加工を施すことになる。図1の場合、2つのシート片となる。なお、受容部を”田”の字

のように4分割し、台紙部を図1と同じの二分割にするなどの変形も可能である。

【0013】また、図3および図4に示すような、受容部のハーフカットとは重ならず、受容部まで貫通するミシン目加工を施すことができる。図3および図4の場合、受容部は分離使用可能な部分が16箇所設けられ、台紙部は8シート片に分離可能であるから、台紙部は受容部の分離使用可能な数より少ない数であり、受容部の分離使用する面積より大きいミシン目加工を施すことになる。勿論、ミシン目加工を16シート片に分離できるように設けても構わない。

【0014】更に、図5および図6に示すような、受容部の分離用のハーフカットとは重ならず、台紙部のみのミシン目加工を施すことができる。図5および図6の場合、受容部は分離使用可能な部分が4箇所設けられ、台紙部は4シート片に分離可能であるから、台紙部は受容部の分離使用可能な数と同数であり、受容部の分離使用する面積より大きいミシン目加工を施すことになる。勿論、ミシン目を4分割でなく、2分割にすることもできる。この構成の熱転写用受容シートは、プリント後に受容部の分離して使用しない部分を取り除くことにより、図7のようなミシン目を設けた台紙部が表面に現れ、容易に分離することができるものである。

【0015】受容部の支持体としては、受容シートとして公知の紙、フィルム、合成紙或いはこれらの積層体などが使用できるが、一方、台紙部としては、紙、フィルム、合成紙、或いはこれらの積層体、若しくはこれらに剥離剤層を形成した剥離シートなどが使用できる。中でも、紙などを支持体として用いると、プリンター内部等でミシン目部分などから破れてしまう恐れがあるので、受容部の支持体、台紙部の支持体の少なくとも一方がフィルムまたは合成紙を用いることが好ましい。特に、フィルムのなかでもPETフィルムの使用は、シート破れは勿論、プリントして得られる画像が優れるので好ましい。なお、PETについては、発泡PETや白色PET、透明PETなど特に限定されない。また、他の合成紙やフィルム、紙などを積層して一体化した支持体も使用できる。画質を重視するならば、内部にボイドを有するフィルムなど、何らかの形で空隙を持った支持体を染料受容面に近い部分に積層した構成にすることが好ましい。

【0016】本発明の熱転写用受容シートにおいて、受容部は、支持体上に昇華型熱転写記録用、溶解型熱転写記録用といった公知の受容層を形成したものが得られる。昇華型熱転写記録の場合を更に詳細に記載すると、インクリボンから転写される昇華性染料を染着し得る昇華受容性樹脂を主成分として形成される。このような染着性樹脂としては、ポリエステル樹脂、塩化ビニル-酢酸ビニル共重合体樹脂、ポリカーボネート樹脂、アクリル樹脂、セルロース誘導体等が例示される。染料受容層

の塗工量は乾燥重量で、 $1 \sim 12 \text{ g/m}^2$  であることが好ましく、より好ましくは  $3 \sim 10 \text{ g/m}^2$  である。染料受容層が  $1 \text{ g/m}^2$  未満では、画像が劣化したり、プリント面の光沢が低下する等の欠点が生ずることがある。また、染料受容層が  $12 \text{ g/m}^2$  以上だと効果が飽和し不経済であるばかりか、プリント濃度が低下することがある。上記の染料受容層には、プリントの際にサーマルヘッドの加熱によるインクリボンとの融着を防ぐ目的で、架橋剤や、滑り剤、剥離剤等を必要に応じて添加されていることが好ましい。また、必要に応じ、受容層中に蛍光染料、可塑剤、酸化防止剤、顔料、紫外線吸収剤等を添加してもよい。これらの添加剤は、受容層の主成分と混合し塗工されてもよいし、別の被覆層として受容層の上および/または下に塗工されていてもよい。なお、染料受容層は、バーコーター、グラビアコーター、コンマコーター、ブレードコーター、エアナイフコーター等のコーターを使い、常法に従って受容層形成用塗液を塗工、乾燥して形成することができる。

【0017】本発明は受容部と台紙部とは剥離可能な状態で積層されるものである。剥離可能な状態で積層とは、台紙部として剥離シートを用い、粘着剤を介して受容部を積層する方法、台紙部と受容部をワックスなどで仮接着する方法などがある。中でも、粘着剤を介して積層する方法は、ラベルやシールとして広く使用される可能性があるため好ましく、以下に詳細に説明する。

【0018】台紙部として剥離紙を用いる場合、剥離基材にシリコン等の剥離剤層を形成した公知の剥離シートが使用できる。剥離基材としては、PETフィルム、発泡PETフィルム、ポリオレフィン系の合成紙、複合フィルム、セルロースパルプを主成分とする原紙、あるいは原紙にポリエチレン系樹脂等を少なくとも片側にラミネートしたものなどが用いられる。

【0019】セルロースパルプは特に限定されず、前述のパルプを同様に使用でき、原紙の種類も特に限定されことなく、上質紙、グラシン紙、クラフト紙、中質紙などが挙げられる。また、コート紙を用いても良いが、コスト面を考慮して未塗工紙あるいは軽量コート紙を用いると良い。原紙にラミネートされる熱可塑性樹脂は特に限定されないが、低密度ポリエチレン、高密度ポリエチレン、ポリプロピレン、ポリブテン、ポリペンテン等のホモポリマー、またはエチレン・ポリプロピレン共重合体等のオレフィンの2つ以上からなる共重合体、あるいはエチレンと $\alpha$ オレフィンとの共重合体である直鎖状低密度ポリエチレン、およびこれらの混合物であり、各種の密度およびメルトインデックスのものを単独あるいはそれらを混合して使用できる。これら熱可塑性樹脂には、二酸化チタン、硫化亜鉛、酸化亜鉛、硫酸カルシウム、亜硫酸カルシウム、硫酸バリウム、クレー、焼成クレー、タルク、カオリン、炭酸カルシウム、シリカ、珪酸カルシウム等の白色顔料等、ステアリン酸アミド、ステアリ

ン酸亜鉛などの樹脂金属塩、ヒンダードフェノール等の各種酸化防止剤、コバルトブルー、群青等の顔料や染料、蛍光増白剤、紫外線吸収剤、ブロッキング防止剤、スリップ剤等、適宜組み合わせる添加しても良い。

【0020】剥離剤の剥離基材への塗工方法は、グラビアコーターやバーコーター等公知の方法で行うことができ、この場合の塗工量は、固形分で  $0.3 \sim 1.5 \text{ g/m}^2$ 、好ましくは、 $0.5 \sim 1.2 \text{ g/m}^2$  が適当である。 $0.3 \text{ g/m}^2$  未満では、剥離性能のパラツキが大きく、また、 $1.5 \text{ g/m}^2$  以上では経済性の面から必要性に乏しい。また、台紙部と受容部を積層する粘着剤としては、アクリル系、合成ゴム系、天然ゴム系、シリコン系等の公知の粘着剤を使用できる。粘着剤は剥離シートの剥離剤層表面に塗工し乾燥した後、これを、受容部の受像層を形成していない面に貼り合わせしてもよいし、受容部の受像層を形成していない面に粘着剤を塗工乾燥後、これに剥離シートの剥離剤層面を貼り合わせしてもよい。粘着剤層には、必要に応じて、架橋剤や充填剤を添加することができる。なお、粘着剤層は、受容部と台紙部が剥離して生じるプリンター内での走行上のトラブルを防止し、且つ、プリント後の受容部の剥離を困難としないため、受容部と台紙部との剥離力が、 $90 \text{ mm}$  / 分の剥離スピードで測定した場合、 $2 \sim 15 \text{ g}/20 \text{ mm}$  (染料熱転写受容タックシートを  $20 \text{ mm}$  幅に切断し、受容部を台紙部から  $180^\circ$  の引っ張り角度にて引き剥したときにかかる負荷) となるのが好ましい。

【0021】なお、本発明の熱転写用受容シートがプリンター内を走行するとき、静電気による走行トラブルの発生を防ぐため、熱転写用受容シートの裏面に、少なくとも一層以上の帯電防止層を設けることができる。帯電防止層としては、例えば、バインダー樹脂と帯電防止剤を主成分として含む帯電防止層を裏面塗工しても良い。バインダー樹脂としては、公知の高分子バインダーを任意に選択して使用でき、ポリエステル系、ポリウレタン系、メラミン系、アクリル系、フェノール系、尿素系の各バインダーの他、酢酸ビニル樹脂エマルジョン、アクリルエマルジョン、ポリオレフィン系エマルジョン、セルロース誘導体、ポリビニルアルコールなどが例示される。塗工量は乾燥重量で、 $0.3 \sim 1.5 \text{ g/m}^2$  の範囲内にあることが好ましい。この塗工量が  $0.3 \text{ g/m}^2$  未満であると、受容層と裏面とが擦り合ったとき受容層の傷つきを十分に防止できないことがあり、またそれが  $1.5 \text{ g/m}^2$  をこえると、効果が飽和し不経済である。

【0022】

【実施例】下記実施例により本発明を詳細に説明するが、本発明の範囲はこれらに限定されるものではない。なお、実施例において、特に断らない限り「%」および「部」はすべて「重量%」および「重量部」を示す。

【0023】実施例1

〔受容部用支持体の作成〕厚さ125 $\mu$ mの透明PET(帝人製、商品名:T-125)の片側に、厚さ55 $\mu$ mのクリアー層とボイド層の多層構造を有する複合フィルム(モービルパール社製、商品名:モービルパール260LLE-202)をにより貼着し、複合フィルムの貼着していない面にポリオレフィンを主成分とする厚さ60 $\mu$ mの合成フィルムをにより貼着し受容部用支持体を得た。

【0024】〔受容部の作成〕前記受容部用支持体の複合フィルム面に、下記の受容層用塗料を固形分8g/m<sup>2</sup>の割合でダイコーティング法により塗工、乾燥した。

「受容層用塗料」飽和ポリエステル樹脂(東洋紡製、商品名:パイロン200)100部、およびシリコン樹脂(トーレダウコーニングシリコン製、商品名:SH3746)5部を、トルエン/メチルエチルケトン=5/1の混合溶剤で18%に希釈し受容層用塗料とした。

【0025】〔台紙部の作成〕剥離基材として、厚さ100 $\mu$ mの発泡PETフィルム(ダイヤホイルヘキスト製、商品名:W900E-100)を用い、その一方の面に、シリコン系剥離剤(信越化学工業製、商品名:KS-830)を固形分で0.6g/m<sup>2</sup>となるように、グラビアコーティング法で塗工、乾燥して離型剤層を形成した。また、剥離剤層を形成していない面には帯電防止層として、下記帯電防止塗料を固形分0.5g/m<sup>2</sup>の割合でバーコーティング法で塗工、乾燥して剥離シート(台紙部)を作製した。

「帯電防止塗料」アクリル樹脂(中央理化製、商品名:リカボンドSA-R615A)100部、エポキシ硬化剤(中央理化製、商品名:リカボンドSA-R615B)5部、導電剤(三菱油化製、商品名:ST-2000H)75部、およびシリカ顔料(水沢化学製、商品名:P78A)30部を、変性イソプロピルアルコール/水=8/2の混合溶液で12%に希釈した。

【0026】〔熱転写用受容シートの製造〕台紙部の剥離剤層の上には下記のアクリル系粘着剤塗料を塗布し、台紙部と受容部とを重ね合わせて貼着した。

「アクリル系粘着剤塗料」アクリル系粘着剤(日本カーバイド製、商品名:PE-115E)100部、イソシア硬化剤(日本カーバイド製、商品名:CK-101)1部、およびエポキシ硬化剤(日本カーバイド製、商品名:CK-202)3部を、酢酸エチル溶液で20%に希釈した。

【0027】〔ミシン目およびハーフカットの処理〕次いで、図1および図2に示すように、受容部に受容部を2等分ハーフカットを、台紙部に受容部のハーフカットと同じようにミシン目加工を施し、熱転写用受容シートを得た。

【0028】比較例1

ミシン目をいれなかった以外は、実施例1と同様にして熱転写用受容シートを得た。

【0029】〔評価〕市販の昇華ビデオプリンター(ソニー製、商品名:M-1)を用いて、実施例1と比較例1で得られた熱転写用受容シートに、2分割画面をプリントしたところ、両方ともプリンター内でのトラブルの発生はなかった。次に、道具を使わず手で熱転写用受容シートを複数に分割することを試みたところ、実施例1の受容シートは容易にミシン目部分で分離できたが、比較例1ははさみ等を用いない限り分離できなかった。なお、分割した後、受容部は台紙部から容易に剥離できた。

【0030】実施例2

〔受容部の製造〕受容部用支持体として、マイクロボイドが形成されている厚さ50 $\mu$ mの発泡PETフィルム(東レ製、商品名:50E63)を用い、その一方の面上に、実施例1と同様にして、受容層を形成し、受容部を得た。

〔熱転写用受容シートの製造〕上記受容部を用いた以外は、実施例1と同様にして、受容部と台紙部を積層した。

【0031】〔ミシン目およびハーフカットの処理〕次いで、図3および図4に示すように、受容部に受容部を16個のハーフカットにより囲まれた部分を形成した。該ハーフカットにより囲まれた部分は画像をプリントした後、剥離使用する部分である。ミシン目については、前記ハーフカットによって形成されるシールがちょうど2つずつに分けられるように、受容シート全体に(受容部および台紙部にわたって)ミシン目を施した。

【0032】比較例2

ミシン目をいれなかった以外は、実施例2と同様にして熱転写用受容シートを得た。

【0033】〔評価〕市販の昇華ビデオプリンター(ソニー製、商品名:M-1)を用いて、実施例2と比較例2で得られた熱転写用受容シートに、16分割画面をプリントしたところ、両方ともプリンター内でのトラブルの発生はなかった。次に、道具を使わず手で熱転写用受容シートを複数に分割することを試みたところ、実施例2の受容シートは容易にミシン目部分で分離できたが、比較例2ははさみ等を用いない限り分離できなかった。なお、分割した後、受容部は台紙部から容易に剥離できた。

【0034】実施例3

〔受容部の製造〕受容部用支持体として、マイクロボイドが形成されている厚さ75 $\mu$ mの発泡PETフィルム(ダイヤホイルヘキスト製、商品名:W900J-75)を用い、その一方の面上に、実施例1と同様にして、受容層を形成し、受容部を得た。

〔熱転写用受容シートの製造〕上記受容部を用いた以外は、実施例1と同様にして、受容部と台紙部を積層した。

【0035】〔ミシン目およびハーフカットの処理〕次

いで、図5および図6に示すように、受容部に受容部を4個のハーフカットにより囲まれた部分を形成した。該ハーフカットにより囲まれた部分は画像をプリントした後、剥離使用する部分である。ミシン目については、前記ハーフカットによって形成されるシールがちょうど1つずつに分けられるように、台紙部のみにミシン目を施した。

#### 【0036】比較例3

ミシン目をいれなかった以外は、実施例3と同様にして熱転写用受容シートを得た。

【0037】〔評価〕市販の昇華ビデオプリンター（ソニー製、商品名：M-1）を用いて、実施例3と比較例3で得られた熱転写用受容シートに、4分割画面をプリントしたところ、両方ともプリンター内でのトラブルの発生はなかった。次に、実施例3の熱転写用受容シートを図7に示すように図6の不使用部分6を取り除くと、ミシン目3が現れた。この状態で道具を使わず手で熱転写用受容シートを複数に分割することを試みたところ、実施例3の受容シートは容易にミシン目部分で分離できた。一方、比較例3の熱転写用受容シートの不使用部分を剥離しても、はさみ等を用いない限り分離できなかった。なお、分割した後、受容部は台紙部から容易に剥離できた。

#### 【0038】

【発明の効果】本発明の熱転写用受容シートは、トラブルを生じることなくプリントすることができ、プリント後、道具を用いずに容易に受容部と台紙部を積層した状態で複数のシート片に分離できた。

#### 【図面の簡単な説明】

【図1】本発明の熱転写用受容シートの一例を示す平面図である。

【図2】図1に示す熱転写用受容シートのA-Aにおける断面説明図である。

【図3】本発明の熱転写用受容シートの他の一例を示す平面図である。

【図4】図3に示す熱転写用受容シートのB-Bにおける断面説明図である。

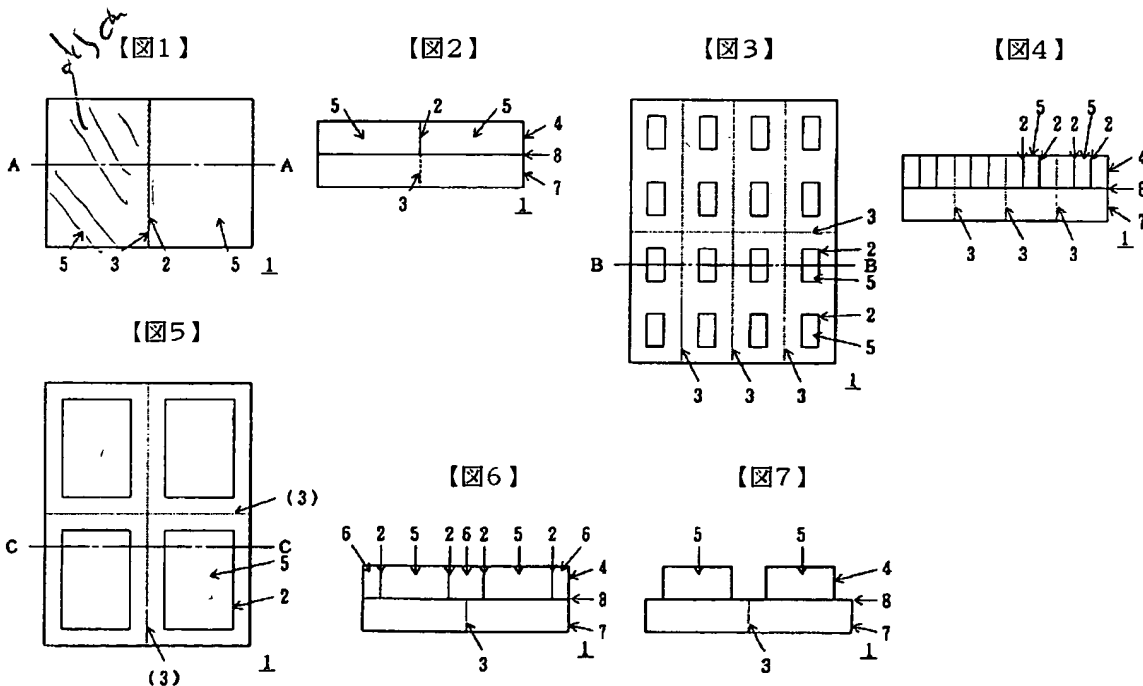
10 【図5】本発明の熱転写用受容シートの別の一例を示す平面図である。なお、表面（受容部側）よりは、裏面に設けたミシン目3は見えないが、ハーフカットとミシン目との関係を説明するために示した。

【図6】図5に示す熱転写用受容シートのC-Cにおける断面説明図である。

【図7】図6に示す熱転写用受容シートの分離使用しない部分を除いた状態を説明するための断面説明図である。

#### 【符号の説明】

- 20 1：熱転写用受容シート  
2：ハーフカット  
3：ミシン目  
4：受容部  
5：分離使用部分  
6：不使用部分  
7：台紙部  
8：剥離面





フロントページの続き

(72)発明者 林 滋雄

東京都江東区東雲1丁目10番6号 王子製  
紙株式会社東雲研究センター内

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 10-193808

(43)Date of publication of application : 28.07.1998

---

(51)Int. CI. B41M 5/38

B32B 5/24

B32B 7/02

B32B 27/28

B41M 7/00

---

(21)Application number : 09-003694 (71)Applicant : OJI PAPER CO  
LTD

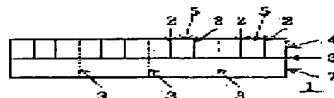
(22)Date of filing : 13.01.1997 (72)Inventor : SHIMIZU  
YUUKO  
KUBO NAOKI  
TOMIKANEHARA  
MASAHIRO  
HAYASHI  
SHIGEO

---

(54) THERMAL TRANSFER RECEIVING SHEET

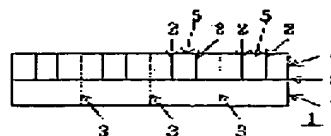
(57)Abstract:

PROBLEM TO BE SOLVED: To make possible to divide into multiple parts neatly easily without using a tool such as a scissors by providing perforations intended for separating mount



sections on the mount, and treating them as small pieces of paper where receiving sections and mount sections are laminated.

SOLUTION: In providing perforations to a mount 7 so that they may superpose on half cuts of a receiving section 4, perforations 3 for separating mount sections 7 are provided so that the number of the mount sections 7 may be the same as or smaller than the number of separable and usable sections of the receiving parts 4 and their areas may be the same as or larger than the areas of separable and usable sections of the receiving section 4. And then, by separating by the perforations 3, the receiving section 4 and the mount sections 7 are treated as small pieces of paper. Printing can be made without trouble, and after printing, the sheet can be separated into multiple pieces of paper without using scissors or a knife.



---

#### LEGAL STATUS

[Date of request for examination] 13.08.2003

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against  
examiner's decision of  
rejection]

[Date of requesting appeal  
against examiner's decision of  
rejection]

[Date of extinction of right]

Copyright (C); 1998, 2003 Japan Patent Office

**\* NOTICES \***

**Japan Patent Office is not responsible for any damages caused by the use of this translation.**

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

---

**CLAIMS**

---

[Claim(s)]

[Claim 1] It has the pasteboard section for holding the acceptance section at the rear face of the acceptance section which has an acceptance layer on the surface of a base material, and this acceptance section. In the acceptance sheet for hot printing which half cutting is given so that the laminating of the acceptance section and the pasteboard section may be carried out in the state where it can exfoliate and the acceptance section can divide them into plurality, and separates and uses the acceptance section for plurality after a print the pasteboard section -- separation of the acceptance section -- so that it may become the area in which the acceptance section carries out separation use an usable number and below the same number, and the area of the same more than The acceptance sheet for hot printing characterized by the ability to deal with it as a piece of a small sheet which carried out the laminating of the acceptance section and the pasteboard section by providing the perforation for pasteboard section separation and dissociating by this perforation.

[Claim 2] The acceptance sheet for hot printing according to claim 1 which is the composition that the pasteboard section is an ablation sheet and the laminating of the state which can exfoliate the acceptance section and the pasteboard section carries out the laminating of the acceptance section through a binder.

[Claim 3] The acceptance sheet for hot printing according to claim 1 or 2 at least whose one side of the base material of the acceptance section and the base material of the pasteboard section is a film or a synthetic paper.

[Claim 4] The acceptance sheet for hot printing given in any 1 term of the claims 1-3 to which the perforation of the pasteboard section laps with the half cutting of the acceptance section.

[Claim 5] The acceptance sheet for hot printing given in any 1 term of the claims

1-3 which are the perforations which the half cutting for separation of the acceptance section does not lap, but the perforation of the pasteboard section penetrates to the acceptance section.

[Claim 6] The acceptance sheet for hot printing given in any 1 term of the claims 1-3 whose perforations of the pasteboard section the half cutting for separation of the acceptance section does not lap, but are perforations of only the pasteboard section.

---

[Translation done.]

**\* NOTICES \***

**Japan Patent Office is not responsible for any damages caused by the use of this translation.**

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

---

**DETAILED DESCRIPTION**

---

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to the acceptance sheet for hot printing suitable for the hot printing method, especially the sublimated type thermal imprint recording method. Furthermore, if it states in detail, after a print is related with the acceptance sheet for hot printing which can divide an acceptance sheet into plurality easily and finely, without using tools, such as scissors, along with a perforation.

[0002]

[Description of the Prior Art] In recent years, the color hard copy of a hot printing method and printer development of the sublimated type hot printing method with which a clear full color picture is acquired especially are progressing quickly. Imprint formation of the full color picture of concentration gradation is possible by controlling the heating energy of a thermal head continuously, heating the ribbon containing the sublimation color layer of three colors (yellow, a Magenta, cyanogen) or four colors (yellow, a Magenta, cyanogen, black) in order, in a sublimated type heat transfer printer, and changing the amount of imprints of each color. In the case of sublimated type hot printing, the size of a ribbon and an acceptance sheet is dependent on a printer, and such an acceptance sheet cannot change the size of a sheet freely by the same printer, although various uses, such as a print of full color record and a digital image, are expected.

[0003]

[Problem(s) to be Solved by the Invention] However, although the picture could be divided arbitrarily, for example, two division, quadrisection, the division seal by which 16 division print or half cutting processing was carried out attracted attention by digital processing and the function of a printer, an acceptance sheet was not able to be divided if not cut with the scissors after a print etc. in arbitrary

sizes.

[0004]

[Means for Solving the Problem] It made it possible to divide into plurality easily and finely by having perforations arbitrary on pasteboard at least in the acceptance sheet for the hot printing which this invention person etc. has more than two-layer [ of the acceptance section and pasteboard ] at least in view of such a situation as a result of wholeheartedly research, not using tools, such as scissors and a cutter knife, purposely after a print. By dividing an acceptance sheet into plurality along with a perforation as mentioned above, it becomes possible to divide finely into two or more human beings easily the acceptance sheet and acceptance tuck sheet with which the split screen was printed, without using no tool.

[0005] (1) this invention has the pasteboard section for holding the acceptance section at the rear face of the acceptance section which has an acceptance layer on the surface of a base material, and this acceptance section. In the acceptance sheet for hot printing which half cutting is given so that the laminating of the acceptance section and the pasteboard section may be carried out in the state where it can exfoliate and the acceptance section can divide them into plurality, and separates and uses the acceptance section for plurality after a print the pasteboard section -- separation of the acceptance section -- so that it may become the area in which the acceptance section carries out separation use an usable number and below the same number, and the area of the same more than It is the acceptance sheet for hot printing characterized by the ability to deal with it as a piece of a small sheet which carried out the laminating of the acceptance section and the pasteboard section by providing the perforation for pasteboard section separation and dissociating by this perforation.

[0006] The composition of this invention turns into composition useful as a seal or a sticker by using a binder for a laminating.

(2) acceptance -- the section -- pasteboard -- the section -- ablation -- being possible -- a state -- a laminating -- pasteboard -- the section -- ablation -- a sheet -- it is -- a binder -- minding -- acceptance -- the section -- a laminating -- carrying out -- composition -- it is -- (-- one --) -- a publication -- hot printing -- \*\* -- acceptance -- a sheet -- it is .

[0007] Since the tear which is not considered as an intention [ portion / perforation / inside a printer etc. ] for either / at least / the base material of the acceptance section or the base material of the pasteboard section to be a film or a synthetic paper stops arising, it becomes desirable composition especially.

(3) (1) at least whose one side of the base material of the acceptance section and the pasteboard section is a film or a synthetic paper, or the acceptance sheet for



hot printing given in (2).

[0008] Furthermore, as a result of repeating research about the relation between the half cutting of the acceptance section, and the perforation of the pasteboard section, the next composition is very practical, and since stable image recording can be performed, it becomes desirable composition.

(4) The perforation of the pasteboard section is the acceptance sheet for hot printing given in any of (1) - (3) they are which laps with the half cutting of the acceptance section.

(5) pasteboard -- the section -- a perforation -- acceptance -- the section -- separation -- \*\* -- half cutting -- not lapping -- acceptance -- the section -- up to -- penetrating -- a perforation -- it is -- (-- one --) - (-- three --) -- any -- or -- a publication -- hot printing -- \*\* -- acceptance -- a sheet -- it is .

(6) pasteboard -- the section -- a perforation -- acceptance -- the section -- separation -- \*\* -- half cutting -- not lapping -- pasteboard -- the section -- a perforation -- it is -- (-- one --) - (-- three --) -- any -- or -- a publication -- hot printing -- \*\* -- acceptance -- a sheet -- it is .

[0009]

[Embodiments of the Invention] this invention has the pasteboard section for holding the acceptance section at the rear face of the acceptance section which has an acceptance layer on the surface of a base material, and this acceptance section. In the acceptance sheet for hot printing which half cutting is given so that the laminating of the acceptance section and the pasteboard section may be carried out in the state where it can exfoliate and the acceptance section can divide them into plurality, and separates and uses the acceptance section for plurality after a print the pasteboard section -- separation of the acceptance section -- so that it may become the area in which the acceptance section carries out separation use an usable number and below the same number, and the area of the same more than It is the acceptance sheet for hot printing characterized by the ability to deal with it as a piece of a small sheet which carried out the laminating of the acceptance section and the pasteboard section by providing the perforation for pasteboard section separation and dissociating by this perforation.

[0010] Half cutting here is the method of cutting deeply currently conventionally used with the seal etc., in the acceptance sheet for hot printing of this invention, slitting is put in from an acceptance section side and the slitting says what has not penetrated the pasteboard section. You may have a non-cutting portion in a part of slitting. The acceptance sheet for hot printing of this invention can separate and use the acceptance section for arbitrary configurations and the number by half cutting. In addition, neither the size nor especially the depth of the number and slitting of half cutting is limited.

[0011] On the other hand, a perforation says the shape of a well-known perforation, the shape of a dotted line, and a perforated line similar to this conventionally that to be in the state which carried out the laminating of the portion in which the acceptance section carries out separation use, and what is necessary is just slitting processing which can be separated easily, without scissors etc. using from the pasteboard section. The array interval of a perforation, especially a size, etc. are not limited. Moreover, you may arrange a perforation to a biseriate. this invention -- this perforation -- separation of the acceptance section -- an usable number and below the same number -- and it is the feature to give so that it may become the area in which the acceptance section carries out separation use, and the area of the same more than Specifically, although it is the composition which is raised to a degree, it does not limit to especially these.

[0012] For example, perforation processing can be given to the pasteboard section so that it may lap with the half cutting of the acceptance section as shown in drawing 1 and drawing 2 . in this case, the pasteboard section -- separation of the acceptance section -- it is an usable number and the same number and the same perforation processing as the area in which the acceptance section carries out separation use will be given In the case of drawing 1 , it becomes two pieces of a sheet. In addition, deformation of quadrisecting the acceptance section like the character of a "rice field", and making the pasteboard section the same two piece housing as drawing 1 is also possible.

[0013] Moreover, it does not lap with the half cutting of the acceptance section as shown in drawing 3 and drawing 4 , but perforation processing penetrated to the acceptance section can be given. the case of drawing 3 and drawing 4 -- the acceptance section -- separation -- since 16 usable portions are prepared and the pasteboard section can be divided into the piece of 8 sheets -- the pasteboard section -- separation of the acceptance section -- it is a number fewer than an usable number, and larger perforation processing than the area in which the acceptance section carries out separation use will be given Of course, you may prepare so that perforation processing can be divided into the piece of 16 sheets.

[0014] Furthermore, it does not lap with the half cutting for separation of the acceptance section as shown in drawing 5 and drawing 6 , but perforation processing of only the pasteboard section can be given. the case of drawing 5 and drawing 6 -- the acceptance section -- separation -- since four usable portions are prepared and the pasteboard section can be divided into the piece of 4 sheets -- the pasteboard section -- separation of the acceptance section -- it is an usable number and the same number and larger perforation processing than the area in

which the acceptance section carries out separation use will be given Of course, it is not quadrisection and a perforation can also be carried out comparatively for 2 minutes. By removing the portion which the acceptance section does not use after a print, separating, the pasteboard section which prepared a perforation like drawing 7 can appear in a front face, and can separate easily the acceptance sheet for hot printing of this composition.

[0015] As a base material of the acceptance section, paper well-known as an acceptance sheet, a film, synthetic papers, or these layered products can be used. On the other hand, as the pasteboard section, paper, a film, synthetic papers, these layered products, or the ablation sheet that formed the remover layer in these can be used. Since there is a possibility that it may be torn from a perforation portion etc. inside a printer etc., especially when paper etc. is used as a base material, it is desirable that at least one side of the base material of the acceptance section and the base material of the pasteboard section uses a film or a synthetic paper. Also in a film, as well as especially a sheet tear, since the picture printed and acquired is excellent, use of a PET film is desirable. In addition, especially about PET, Foaming PET, white PET, transparent PET, etc. are not limited. Moreover, the base material which carried out the laminating of other synthetic papers, a film, paper, etc., and was unified can also be used. If quality of image is thought as important, as for the film which has a void inside, it will be desirable to make the base material which had an opening in a certain form the composition which carried out the laminating to the portion near a color acceptance side.

[0016] In the acceptance sheet for hot printing of this invention, that by which the acceptance section formed well-known acceptance layers, such as an object for sublimated type thermal transfer recording and an object for melting type thermal transfer recording, on the base material is obtained. If the case of sublimated type thermal transfer recording is indicated still in detail, the sublimation receptiveness resin which can dye the sublimability color imprinted from an ink ribbon will be formed as a principal component. As such a dyeing property resin, polyester resin, a vinyl-chloride-vinyl-acetate-copolymer resin, polycarbonate resin, acrylic resin, a cellulosic, etc. are illustrated. the amount of coating of a color acceptance layer -- dry weight -- it is -- 1 - 12 g/m<sup>2</sup> it is -- things -- desirable -- more -- desirable -- 3 - 10 g/m<sup>2</sup> it is . A color acceptance layer is 1 g/m<sup>2</sup>. In the following, a picture may deteriorate or the fault of the gloss of a print side falling may arise. Moreover, a color acceptance layer is 12 g/m<sup>2</sup>. When it is above, an effect may be saturated and about [ being uneconomical ] and print concentration may fall. It is desirable that the above-mentioned color acceptance layer adds the cross linking agent, a slipping agent, a remover, etc. if needed in the case of a print in order to prevent weld with the ink ribbon by heating of a

thermal head. Moreover, you may add a fluorescent dye, a plasticizer, an antioxidant, a pigment, an ultraviolet ray absorbent, etc. in an acceptance layer if needed. It mixes with the principal component of an acceptance layer, coating of these additives may be carried out, and coating may be carried out on an acceptance layer and/or to the bottom as another enveloping layer. In addition, a color acceptance layer -- coating machines, such as a bar coating machine, a gravure coating machine, a comma coating machine, a blade coating machine, and an air knife coater, -- using -- a conventional method -- following -- the coating liquid for acceptance stratification -- coating -- it can dry and form [0017] The laminating of this invention is carried out in the state where the acceptance section and the pasteboard section can exfoliate. There are a method of carrying out the laminating of the acceptance section to a laminating through a binder in the state where it can exfoliate, using an ablation sheet as the pasteboard section, the method of carrying out temporary adhesion of the pasteboard section and the acceptance section with a wax etc., etc. Since the method of carrying out a laminating through a binder especially may be widely used as a label or a seal, it is desirable, and it is explained in detail below.

[0018] When using a releasing paper as the pasteboard section, the well-known ablation sheet which formed remover layers, such as silicone, in the ablation base material can be used. As an ablation base material, what laminated the polyethylene system resin etc. in one side at least is used for a PET film, a foaming PET film, the synthetic paper of a polyolefine system, a complex film, the stencil paper that makes cellulose pulp a principal component, or stencil paper.

[0019] Paper of fine quality, glassine, kraft paper, a report grade paper, etc. are mentioned without not limiting especially cellulose pulp, but being able to use the above-mentioned pulp similarly and also limiting especially the kind of stencil paper. Moreover, although coat paper may be used, it is good to consider a cost side and to use a non-coated paper or lightweight coat paper. Although not limited, especially the thermoplastics laminated in stencil paper is the straight chain-like low density polyethylenes which are the copolymer which consists or more of two of olefins, such as homopolymers, such as a low density polyethylene, a high density polyethylene, polypropylene, a polybutene, and the poly pentene, or an ethylene polo pyrene copolymer, or the copolymer of ethylene and an alpha olefin, and such mixture, and it can use various kinds of densities and the thing of a melt index for independent or them, mixing it. In these thermoplastics, pigments, such as various antioxidants, such as resin metal salts, such as octadecanamide, such as white pigments, such as a titanium dioxide, zinc sulfide, a zinc oxide, a calcium sulfate, a calcium sulfite, a barium

sulfate, clay, baking clay, talc, a kaolin, a calcium carbonate, a silica, and a calcium silicate, and a zinc stearate, and a hindered phenol, cobalt blue, and ultramarine blue, a color, a fluorescent brightener, an ultraviolet ray absorbent, a blocking inhibitor, a slipping agent, etc. may be combined suitably, and may be added.

[0020] the coating method to the ablation base material of a remover -- well-known methods, such as a gravure coating machine and a bar coating machine, -- it can carry out -- the amount of coating in this case -- a solid content -- 0.3-1.5g/m<sup>2</sup> -- desirable -- 0.5 - 1.2 g/m<sup>2</sup> It is suitable. 0.3 g/m<sup>2</sup> In the following, the variation in detachability ability is large, and it is 1.5 g/m<sup>2</sup>. It is above scarce from the field of economical efficiency to need. Moreover, as a binder which carries out the laminating of the pasteboard section and the acceptance section, well-known binders, such as acrylic, a synthetic-rubber system, a natural rubber system, and a silicone system, can be used. A binder may be stuck a binder on the field which may carry out lamination of this to the field which does not form the television layer of the acceptance section, and does not form the television layer of the acceptance section after carrying out coating to the remover layer front face of an ablation sheet and drying on it, and the remover stratification plane of an ablation sheet may be stuck on this after coating dryness. In a binder layer, a cross linking agent and a bulking agent can be added if needed. In addition, in order that a binder layer may prevent the trouble on a run within the printer which the acceptance section and the pasteboard section exfoliate and produce and may not make ablation of the acceptance section after a print difficult, When the ablation force of the acceptance section and the pasteboard section measures at 90mm ablation speed for /, 2-15g / 20mm (load applied when a color hot printing acceptance tuck sheet is cut to 20mm width of face and the acceptance section is pulled and removed from the pasteboard section at the hauling angle of 180 degrees), and a bird clapper are desirable.

[0021] In addition, since generating of the run trouble by static electricity is prevented when the acceptance sheet for hot printing of this invention runs in a printer, the above antistatic layer can be further prepared in the rear face of the acceptance sheet for hot printing at least. As an antistatic layer, you may carry out rear-face coating of the antistatic layer which contains a binder resin and an antistatic agent as a principal component, for example. A well-known macromolecule binder can be used as a binder resin, choosing it arbitrarily, and a vinyl-acetate-resin emulsion besides each binder of a polyester system, a polyurethane system, a melamine system, acrylic, a phenol system, and a urea system, an acrylic emulsion, a polyolefine system emulsion, a cellulosic,

polyvinyl alcohol, etc. are illustrated. The amount of coating is dry weight and is 0.3 - 1.5 g/m<sup>2</sup>. It is desirable that it is in within the limits. This amount of coating is 0.3 g/m<sup>2</sup>. When it is the following, when an acceptance layer and a rear face recrimate, it may fully be unable to prevent with [ of an acceptance layer ] a blemish, and it is 1.5 g/m<sup>2</sup>. An effect saturates and is uneconomical if it surpasses.

[0022]

[Example] Although the following example explains this invention in detail, the range of this invention is not limited to these. In addition, in an example, unless it refuses especially, all of "%" and the "section" show "weight %" and the "weight section."

[0023] transparent PET (the Teijin make --) with an example 1 [creation of base material for the acceptance sections] thickness of 125 micrometers Tradename : Look like [ one side of T-125 ] the complex film (mobile pearl company make, tradename:mobile pearl 260LL-202) which has the multilayer structure of a clear layer with a thickness of 55 micrometers and a void layer, and it sticks on it more. The synthetic film with a thickness of 60 micrometers which makes a polyolefine a principal component was looked like [ the field which is not sticking a complex film ], it stuck on it more, and the base material for the acceptance sections was obtained.

[0024] [creation of the acceptance section] -- the paint for acceptance layers of the following [ side / complex film / of the aforementioned base material for the acceptance sections ] -- solid-content 8 g/m<sup>2</sup> comparatively -- coming out -- the die coating method -- coating -- it dried

The "paint for acceptance layers" saturated-polyester resin (Toyobo make, tradename:Byron 200) 100 section and the silicone resin (product made from Toray Dow Corning silicone, tradename:SH3746) 5 section were diluted with the partially aromatic solvent of toluene / methyl-ethyl-ketone =5/1 to 18%, and were used as the paint for acceptance layers.

[0025] [creation of the pasteboard section] -- as an ablation base material -- a foaming PET film (the product made from diamond HOIRUHEKISUTO, tradename:W900E-100) with a thickness of 100 micrometers -- using -- the field of one of these -- a silicon system remover (the Shin-Etsu Chemical make, tradename:KS-830) -- a solid content -- 0.6g/m<sup>2</sup> it becomes -- as -- the gravure coating method -- coating -- it dried and the release agent layer was formed moreover -- the field which does not form the remover layer -- as an antistatic layer -- the following antistatic paint -- solid-content 0.5 g/m<sup>2</sup> comparatively -- coming out -- the bar coating method -- coating -- it dried and the ablation sheet (pasteboard section) was produced

The "antistatic paint" acrylic resin (product made from \*\*\*\*\*-izing, tradename:Rikabond SA-R615A) 100 section, the epoxy curing agent (product made from \*\*\*\*\*-izing, tradename:Rikabond SA-R615B) 5 section, the electric conduction agent (Mitsubishi Petrochemical make, tradename:ST-2000H) 75 section, and the silica pigment (product made from Mizusawa chemistry, tradename-78A) 30 section were diluted with the mixed solution of denaturation isopropyl alcohol / water =8/2 to 12%.

[0026] [Manufacture of the acceptance sheet for hot printing] The following acrylic binder paint was applied on the remover layer of the pasteboard section, and the pasteboard section and the acceptance section were piled up and stuck. The "acrylic binder paint" acrylic binder (product made from Japanese carbide, tradename-E-115E) 100 section, the ISOSHIA curing agent (product made from Japanese carbide, tradename:creatine-kinase-101) 1 section, and the epoxy curing agent (product made from Japanese carbide, tradename:creatine-kinase-202) 3 section were diluted with the ethyl-acetate solution to 20%.

[0027] [Processing of a perforation and half cutting] Subsequently to drawing 1 and drawing 2 , in the acceptance section, perforation processing was given [ the acceptance section ] to the pasteboard section for 2 division-into-equal-parts half cutting like the half cutting of the acceptance section, and the acceptance sheet for hot printing was obtained so that it might be shown.

[0028] The acceptance sheet for hot printing was obtained like the example 1 except having not put in example of comparison 1 perforation.

[0029] [Evaluation] When two split screens were printed on the acceptance sheet for hot printing obtained in the example 1 and the example 1 of comparison using the commercial sublimation video printer (the Sony make, tradename:M-1), generating of the trouble within a printer did not have both. Next, although the acceptance sheet of an example 1 was easily separable in the perforation portion when it tried to divide the acceptance sheet for hot printing into plurality by hand without using a tool, the example 1 of comparison was inseparable unless scissors etc. were used. In addition, after dividing, the acceptance section has exfoliated easily from the pasteboard section.

[0030] As a base material for the example 2 [manufacture of the acceptance section] acceptance sections, like the example 1, the acceptance layer was formed and the acceptance section was obtained on the field of one of these using the foaming PET film (the Toray Industries make, tradename:50E63) with a thickness of 50 micrometers with which the micro void is formed.

[Manufacture of the acceptance sheet for hot printing] The laminating of the acceptance section and the pasteboard section was carried out like the example 1

except having used the above-mentioned acceptance section.

[0031] [Processing of a perforation and half cutting] Subsequently to drawing 3 and drawing 4 , the portion surrounded by the acceptance section by 16 half cutting in the acceptance section was formed so that it might be shown. The portion surrounded by this half cutting is a portion which carries out ablation use, after printing a picture. About the perforation, the perforation (covering the acceptance section and the pasteboard section) was given to the whole acceptance sheet so that the seal formed of the aforementioned half cutting might be exactly divided into two at a time.

[0032] The acceptance sheet for hot printing was obtained like the example 2 except having not put in example of comparison 2 perforation.

[0033] [Evaluation] When 16 split screens were printed on the acceptance sheet for hot printing obtained in the example 2 and the example 2 of comparison using the commercial sublimation video printer (the Sony make, tradename:M-1), generating of the trouble within a printer did not have both. Next, although the acceptance sheet of an example 2 was easily separable in the perforation portion when it tried to divide the acceptance sheet for hot printing into plurality by hand without using a tool, the example 2 of comparison was inseparable unless scissors etc. were used. In addition, after dividing, the acceptance section has exfoliated easily from the pasteboard section.

[0034] As a base material for the example 3 [manufacture of the acceptance section] acceptance sections, like the example 1, the acceptance layer was formed and the acceptance section was obtained on the field of one of these using the foaming PET film (the product made from diamond HOIRUHEKISUTO, tradename:W900J-75) with a thickness of 75 micrometers with which the micro void is formed.

[Manufacture of the acceptance sheet for hot printing] The laminating of the acceptance section and the pasteboard section was carried out like the example 1 except having used the above-mentioned acceptance section.

[0035] [Processing of a perforation and half cutting] Subsequently to drawing 5 and drawing 6 , the portion surrounded by the acceptance section by four half cutting in the acceptance section was formed so that it might be shown. The portion surrounded by this half cutting is a portion which carries out ablation use, after printing a picture. About the perforation, the perforation was given only to the pasteboard section so that the seal formed of the aforementioned half cutting might be exactly divided into one at a time.

[0036] The acceptance sheet for hot printing was obtained like the example 3 except having not put in example of comparison 3 perforation.



[0037] [Evaluation] When the quadrisection screen was printed on the acceptance sheet for hot printing obtained in the example 3 and the example 3 of comparison using the commercial sublimation video printer (the Sony make, tradename:M-1), generating of the trouble within a printer did not have both. Next, as shown in drawing 7 , when the non-used portion 6 of drawing 6 was removed, the perforation 3 appeared the acceptance sheet for hot printing of an example 3. When it tried to divide the acceptance sheet for hot printing into plurality by hand without using a tool in this state, the acceptance sheet of an example 3 was easily separable in the perforation portion. On the other hand, it was inseparable, unless scissors etc. were used, even if it exfoliated the non-used portion of the acceptance sheet for hot printing of the example 3 of comparison. In addition, after dividing, the acceptance section has exfoliated easily from the pasteboard section.

[0038]

[Effect of the Invention] The acceptance sheet for hot printing of this invention could be printed without producing a trouble, and has been divided into two or more pieces of a sheet in the state where the laminating of the acceptance section and the pasteboard section was carried out easily, without using a tool, after the print.

---

[Translation done.]

**\* NOTICES \***

**Japan Patent Office is not responsible for any damages caused by the use of this translation.**

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

---

---

**TECHNICAL FIELD**

---

---

[The technical field to which invention belongs] this invention relates to the acceptance sheet for hot printing suitable for the hot printing method, especially the sublimated type thermal imprint recording method. Furthermore, if it states in detail, after a print is related with the acceptance sheet for hot printing which can divide an acceptance sheet into plurality easily and finely, without using tools, such as scissors, along with a perforation.

---

---

[Translation done.]

\* NOTICES \*

Japan Patent Office is not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

---

PRIOR ART

---

[Description of the Prior Art] In recent years, the color hard copy of a hot printing method and printer development of the sublimated type hot printing method with which a clear full color picture is acquired especially are progressing quickly. Imprint formation of the full color picture of concentration gradation is possible by controlling the heating energy of a thermal head continuously, heating the ribbon containing the sublimation color layer of three colors (yellow, a Magenta, cyanogen) or four colors (yellow, a Magenta, cyanogen, black) in order, in a sublimated type heat transfer printer, and changing the amount of imprints of each color. In the case of sublimated type hot printing, the size of a ribbon and an acceptance sheet is dependent on a printer, and such an acceptance sheet cannot change the size of a sheet freely by the same printer, although various uses, such as a print of full color record and a digital image, are expected.

---

[Translation done.]

\* NOTICES \*

Japan Patent Office is not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

---

---

EFFECT OF THE INVENTION

---

---

[Effect of the Invention] The acceptance sheet for hot printing of this invention could be printed without producing a trouble, and has been divided into two or more pieces of a sheet in the state where the laminating of the acceptance section and the pasteboard section was carried out easily, without using a tool, after the print.

---

---

[Translation done.]

\* NOTICES \*

Japan Patent Office is not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

---

---

TECHNICAL PROBLEM

---

---

[Problem(s) to be Solved by the Invention] However, although the picture could be divided arbitrarily, for example, two division, quadrisection, the division seal by which 16 division print or half cutting processing was carried out attracted attention by digital processing and the function of a printer, an acceptance sheet was not able to be divided if not cut with the scissors after a print etc. in arbitrary sizes.

---

---

[Translation done.]

\* NOTICES \*

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

---

MEANS

---

[Means for Solving the Problem] It made it possible to divide into plurality easily and finely by having perforations arbitrary on pasteboard at least in the acceptance sheet for the hot printing which this invention person etc. has more than two-layer [ of the acceptance section and pasteboard ] at least in view of such a situation as a result of wholeheartedly research, not using tools, such as scissors and a cutter knife, purposely after a print. By dividing an acceptance sheet into plurality along with a perforation as mentioned above, it becomes possible to divide finely into two or more human beings easily the acceptance sheet and acceptance tuck sheet with which the split screen was printed, without using no tool.

[0005] (1) this invention has the pasteboard section for holding the acceptance section at the rear face of the acceptance section which has an acceptance layer on the surface of a base material, and this acceptance section. In the acceptance sheet for hot printing which half cutting is given so that the laminating of the acceptance section and the pasteboard section may be carried out in the state where it can exfoliate and the acceptance section can divide them into plurality, and separates and uses the acceptance section for plurality after a print the pasteboard section -- separation of the acceptance section -- so that it may become the area in which the acceptance section carries out separation use an usable number and below the same number, and the area of the same more than It is the acceptance sheet for hot printing characterized by the ability to deal with it as a piece of a small sheet which carried out the laminating of the acceptance section and the pasteboard section by providing the perforation for pasteboard section separation and dissociating by this perforation.

[0006] The composition of this invention turns into composition useful as a seal or a sticker by using a binder for a laminating.

(2) acceptance -- the section -- pasteboard -- the section -- ablation -- being

possible -- a state -- a laminating -- pasteboard -- the section -- ablation -- a sheet -- it is -- a binder -- minding -- acceptance -- the section -- a laminating -- carrying out -- composition -- it is -- (-- one --) -- a publication -- hot printing -- \*\* -- acceptance -- a sheet -- it is .

[0007] Since the tear which is not considered as an intention [ portion / perforation / inside a printer etc. ] for either / at least / the base material of the acceptance section or the base material of the pasteboard section to be a film or a synthetic paper stops arising, it becomes desirable composition especially.

(3) (1) at least whose one side of the base material of the acceptance section and the pasteboard section is a film or a synthetic paper, or the acceptance sheet for hot printing given in (2).

[0008] Furthermore, as a result of repeating research about the relation between the half cutting of the acceptance section, and the perforation of the pasteboard section, the next composition is very practical, and since stable image recording can be performed, it becomes desirable composition.

(4) The perforation of the pasteboard section is the acceptance sheet for hot printing given in any of (1) - (3) they are which laps with the half cutting of the acceptance section.

(5) pasteboard -- the section -- a perforation -- acceptance -- the section -- separation -- \*\* -- half cutting -- not lapping -- acceptance -- the section -- up to -- penetrating -- a perforation -- it is -- (-- one --) - (-- three --) -- any -- or -- a publication -- hot printing -- \*\* -- acceptance -- a sheet -- it is .

(6) pasteboard -- the section -- a perforation -- acceptance -- the section -- separation -- \*\* -- half cutting -- not lapping -- pasteboard -- the section -- a perforation -- it is -- (-- one --) - (-- three --) -- any -- or -- a publication -- hot printing -- \*\* -- acceptance -- a sheet -- it is .

[0009]

[Embodiments of the Invention] this invention has the pasteboard section for holding the acceptance section at the rear face of the acceptance section which has an acceptance layer on the surface of a base material, and this acceptance section. In the acceptance sheet for hot printing which half cutting is given so that the laminating of the acceptance section and the pasteboard section may be carried out in the state where it can exfoliate and the acceptance section can divide them into plurality, and separates and uses the acceptance section for plurality after a print the pasteboard section -- separation of the acceptance section -- so that it may become the area in which the acceptance section carries out separation use an usable number and below the same number, and the area of the same more than It is the acceptance sheet for hot printing characterized by the ability to deal with it as a piece of a small sheet which carried out the laminating

of the acceptance section and the pasteboard section by providing the perforation for pasteboard section separation and dissociating by this perforation.

[0010] Half cutting here is the method of cutting deeply currently conventionally used with the seal etc., in the acceptance sheet for hot printing of this invention, slitting is put in from an acceptance section side and the slitting says what has not penetrated the pasteboard section. You may have a non-cutting portion in a part of slitting. The acceptance sheet for hot printing of this invention can separate and use the acceptance section for arbitrary configurations and the number by half cutting. In addition, neither the size nor especially the depth of the number and slitting of half cutting is limited.

[0011] On the other hand, a perforation says the shape of a well-known perforation, the shape of a dotted line, and a perforated line similar to this conventionally that to be in the state which carried out the laminating of the portion in which the acceptance section carries out separation use, and what is necessary is just slitting processing which can be separated easily, without scissors etc. using from the pasteboard section. The array interval of a perforation, especially a size, etc. are not limited. Moreover, you may arrange a perforation to a biseriate. this invention -- this perforation -- separation of the acceptance section -- an usable number and below the same number -- and it is the feature to give so that it may become the area in which the acceptance section carries out separation use, and the area of the same more than Specifically, although it is the composition which is raised to a degree, it does not limit to especially these.

[0012] For example, perforation processing can be given to the pasteboard section so that it may lap with the half cutting of the acceptance section as shown in drawing 1 and drawing 2 . in this case, the pasteboard section -- separation of the acceptance section -- it is an usable number and the same number and the same perforation processing as the area in which the acceptance section carries out separation use will be given In the case of drawing 1 , it becomes two pieces of a sheet. In addition, deformation of quadrisecting the acceptance section like the character of a "rice field", and making the pasteboard section the same two piece housing as drawing 1 is also possible.

[0013] Moreover, it does not lap with the half cutting of the acceptance section as shown in drawing 3 and drawing 4 , but perforation processing penetrated to the acceptance section can be given. the case of drawing 3 and drawing 4 -- the acceptance section -- separation -- since 16 usable portions are prepared and the pasteboard section can be divided into the piece of 8 sheets -- the pasteboard section -- separation of the acceptance section -- it is a number fewer than an



usable number, and larger perforation processing than the area in which the acceptance section carries out separation use will be given Of course, you may prepare so that perforation processing can be divided into the piece of 16 sheets. [0014] Furthermore, it does not lap with the half cutting for separation of the acceptance section as shown in drawing 5 and drawing 6 , but perforation processing of only the pasteboard section can be given. the case of drawing 5 and drawing 6 -- the acceptance section -- separation -- since four usable portions are prepared and the pasteboard section can be divided into the piece of 4 sheets -- the pasteboard section -- separation of the acceptance section -- it is an usable number and the same number and larger perforation processing than the area in which the acceptance section carries out separation use will be given Of course, it is not quadrisection and a perforation can also be carried out comparatively for 2 minutes. By removing the portion which the acceptance section does not use after a print, separating, the pasteboard section which prepared a perforation like drawing 7 can appear in a front face, and can separate easily the acceptance sheet for hot printing of this composition.

[0015] As a base material of the acceptance section, paper well-known as an acceptance sheet, a film, synthetic papers, or these layered products can be used. On the other hand, as the pasteboard section, paper, a film, synthetic papers, these layered products, or the exfoliation sheet that formed the remover layer in these can be used. Since there is a possibility that it may be torn from a perforation portion etc. inside a printer etc., especially when paper etc. is used as a base material, it is desirable that at least one side of the base material of the acceptance section and the base material of the pasteboard section uses a film or a synthetic paper. Also in a film, as well as especially a sheet tear, since the picture printed and acquired is excellent, use of a PET film is desirable. In addition, especially about PET, Foaming PET, white PET, transparent PET, etc. are not limited. Moreover, the base material which carried out the laminating of other synthetic papers, a film, paper, etc., and was unified can also be used. If quality of image is thought as important, as for the film which has a void inside, it will be desirable to make the base material which had an opening in a certain form the composition which carried out the laminating to the portion near a color acceptance side.

[0016] In the acceptance sheet for hot printing of this invention, that by which the acceptance section formed well-known acceptance layers, such as an object for sublimated type thermal transfer recording and an object for melting type thermal transfer recording, on the base material is obtained. If the case of sublimated type thermal transfer recording is indicated still in detail, the sublimation

receptiveness resin which can dye the sublimability color imprinted from an ink ribbon will be formed as a principal component. As such a dyeing property resin, polyester resin, a vinyl-chloride-vinyl-acetate-copolymer resin, polycarbonate resin, acrylic resin, a cellulosic, etc. are illustrated. the amount of coating of a color acceptance layer -- dry weight -- it is -- 1 - 12 g/m<sup>2</sup> it is -- things -- desirable -- more -- desirable -- 3 - 10 g/m<sup>2</sup> it is . A color acceptance layer is 1 g/m<sup>2</sup>. In the following, a picture may deteriorate or the fault of the gloss of a print side falling may arise. Moreover, a color acceptance layer is 12 g/m<sup>2</sup>. When it is above, an effect may be saturated and about [ being uneconomical ] and print concentration may fall. It is desirable that the above-mentioned color acceptance layer adds the cross linking agent, a slipping agent, a remover, etc. if needed in the case of a print in order to prevent weld with the ink ribbon by heating of a thermal head. Moreover, you may add a fluorescent dye, a plasticizer, an antioxidant, a pigment, an ultraviolet ray absorbent, etc. in an acceptance layer if needed. It mixes with the principal component of an acceptance layer, coating of these additives may be carried out, and coating may be carried out on an acceptance layer and/or to the bottom as another enveloping layer. in addition, a color acceptance layer -- coating machines, such as a bar coating machine, a gravure coating machine, a comma coating machine, a blade coating machine, and an air knife coater, -- using -- a conventional method -- following -- the coating liquid for acceptance layer formation -- coating -- it can dry and form

[0017] The laminating of this invention is carried out in the state where the acceptance section and the pasteboard section can exfoliate. There are a method of carrying out the laminating of the acceptance section to a laminating through a binder in the state where it can exfoliate, using an exfoliation sheet as the pasteboard section, the method of carrying out temporary adhesion of the pasteboard section and the acceptance section with a wax etc., etc. Since the method of carrying out a laminating through a binder especially may be widely used as a label or a seal, it is desirable, and it is explained in detail below.

[0018] When using a releasing paper as the pasteboard section, the well-known exfoliation sheet which formed remover layers, such as silicone, in the exfoliation base material can be used. As an exfoliation base material, what laminated the polyethylene system resin etc. in one side at least is used for a PET film, a foaming PET film, the synthetic paper of a polyolefine system, a complex film, the stencil paper that makes cellulose pulp a principal component, or stencil paper.

[0019] Paper of fine quality, glassine, kraft paper, a report grade paper, etc. are mentioned without not limiting especially cellulose pulp, but being able to use the above-mentioned pulp similarly and also limiting especially the kind of

stencil paper. Moreover, although coat paper may be used, it is good to consider a cost side and to use a non-coated paper or lightweight coat paper. Although not limited, especially the thermoplastics laminated in stencil paper is the straight chain-like low density polyethylenes which are the copolymer which consists or more of two of olefins, such as homopolymers, such as a low density polyethylene, a high density polyethylene, polypropylene, a polybutene, and the poly pentene, or an ethylene polo pyrene copolymer, or the copolymer of ethylene and an alpha olefin, and such mixture, and it can use various kinds of densities and the thing of a melt index for independent or them, mixing it. In these thermoplastics, pigments, such as various antioxidants, such as resin metal salts, such as octadecanamide, such as white pigments, such as a titanium dioxide, zinc sulfide, a zinc oxide, a calcium sulfate, a calcium sulfite, a barium sulfate, clay, baking clay, talc, a kaolin, a calcium carbonate, a silica, and a calcium silicate, and a zinc stearate, and a hindered phenol, cobalt blue, and ultramarine blue, a color, a fluorescent brightener, an ultraviolet ray absorbent, a blocking inhibitor, a slipping agent, etc. may be combined suitably, and may be added.

[0020] the coating method to the exfoliation base material of a remover -- well-known methods, such as a gravure coating machine and a bar coating machine, -- it can carry out -- the amount of coating in this case -- a solid content -- 0.3-1.5g/m<sup>2</sup> -- desirable -- 0.5 - 1.2 g/m<sup>2</sup> It is suitable. 0.3 g/m<sup>2</sup> In the following, the variation in detachability ability is large, and it is 1.5 g/m<sup>2</sup>. It is above scarce from the field of economical efficiency to need. Moreover, as a binder which carries out the laminating of the pasteboard section and the acceptance section, well-known binders, such as acrylic, a synthetic-rubber system, a natural rubber system, and a silicone system, can be used. A binder may be stuck a binder on the field which may carry out lamination of this to the field which does not form the television layer of the acceptance section, and does not form the television layer of the acceptance section after carrying out coating to the remover layer front face of an exfoliation sheet and drying on it, and the remover stratification plane of an exfoliation sheet may be stuck on this after coating dryness. In a binder layer, a cross linking agent and a bulking agent can be added if needed. In addition, in order that a binder layer may prevent the trouble on a run within the printer which the acceptance section and the pasteboard section exfoliate and produce and may not make exfoliation of the acceptance section after a print difficult, When the exfoliation force of the acceptance section and the pasteboard section measures at 90mm exfoliation speed for /, 2-15g / 20mm (load applied when a color hot printing acceptance tuck sheet is cut to 20mm width of face and the acceptance section is pulled and

removed from the pasteboard section at the hauling angle of 180 degrees), and a bird clapper are desirable.

[0021] In addition, since generating of the run trouble by static electricity is prevented when the acceptance sheet for hot printing of this invention runs in a printer, the above antistatic layer can be further prepared in the rear face of the acceptance sheet for hot printing at least. As an antistatic layer, you may carry out rear-face coating of the antistatic layer which contains a binder resin and an antistatic agent as a principal component, for example. A well-known macromolecule binder can be used as a binder resin, choosing it arbitrarily, and a vinyl-acetate-resin emulsion besides each binder of a polyester system, a polyurethane system, a melamine system, acrylic, a phenol system, and a urea system, an acrylic emulsion, a polyolefine system emulsion, a cellulosic, polyvinyl alcohol, etc. are illustrated. The amount of coating is dry weight and is 0.3 - 1.5 g/m<sup>2</sup>. It is desirable that it is in within the limits. This amount of coating is 0.3 g/m<sup>2</sup>. When it is the following, when an acceptance layer and a rear face recriminate, it may fully be unable to prevent with [ of an acceptance layer ] a blemish, and it is 1.5 g/m<sup>2</sup>. An effect saturates and is uneconomical if it surpasses.

---

[Translation done.]

\* NOTICES \*

Japan Patent Office is not responsible for any damages caused by the use of this translation.

- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

---

EXAMPLE

---

[Example] Although the following example explains this invention in detail, the range of this invention is not limited to these. In addition, in an example, unless it refuses especially, all of "%" and the "section" show "weight %" and the "weight section."

[0023] transparent PET (the Teijin make --) with an example 1 [creation of base material for the acceptance sections] thickness of 125 micrometers Tradename : Look like [ one side of T-125 ] the complex film (mobile pearl company make, tradename:mobile pearl 260LL-202) which has the multilayer structure of a clear layer with a thickness of 55 micrometers and a void layer, and it sticks on it more. The synthetic film with a thickness of 60 micrometers which makes a polyolefine a principal component was looked like [ the field which is not sticking a complex film ], it stuck on it more, and the base material for the acceptance sections was obtained.

[0024] [creation of the acceptance section] -- the paint for acceptance layers of the following [ side / complex film / of the aforementioned base material for the acceptance sections ] -- solid-content 8 g/m2 comparatively -- coming out -- the die coating method -- coating -- it dried

The "paint for acceptance layers" saturated-polyester resin (Toyobo make, tradename:Byron 200) 100 section and the silicone resin (product made from Toray Dow Corning silicone, tradename:SH3746) 5 section were diluted with the partially aromatic solvent of toluene / methyl-ethyl-ketone =5/1 to 18%, and were used as the paint for acceptance layers.

[0025] [creation of the pasteboard section] -- as an ablation base material -- a foaming PET film (the product made from diamond HOIRUHEKISUTO, tradename:W900E-100) with a thickness of 100 micrometers -- using -- the field of one of these -- a silicon system remover (the Shin-Etsu Chemical make, tradename:KS-830) -- a solid content -- 0.6g/m2 it becomes -- as -- the gravure

coating method -- coating -- it dried and the release agent layer was formed moreover -- the field which does not form the remover layer -- as an antistatic layer -- the following antistatic paint -- solid-content 0.5 g/m<sup>2</sup> comparatively -- coming out -- the bar coating method -- coating -- it dried and the ablation sheet (pasteboard section) was produced

The "antistatic paint" acrylic resin (product made from \*\*\*\*\*-izing, tradename:Rikabond SA-R615A) 100 section, the epoxy curing agent (product made from \*\*\*\*\*-izing, tradename:Rikabond SA-R615B) 5 section, the electric conduction agent (Mitsubishi Petrochemical make, tradename:ST-2000H) 75 section, and the silica pigment (product made from Mizusawa chemistry, tradename-78A) 30 section were diluted with the mixed solution of denaturation isopropyl alcohol / water =8/2 to 12%.

[0026] [Manufacture of the acceptance sheet for hot printing] The following acrylic binder paint was applied on the remover layer of the pasteboard section, and the pasteboard section and the acceptance section were piled up and stuck. The "acrylic binder paint" acrylic binder (product made from Japanese carbide, tradename-E-115E) 100 section, the ISOSHIA curing agent (product made from Japanese carbide, tradename:creatine-kinase-101) 1 section, and the epoxy curing agent (product made from Japanese carbide, tradename:creatine-kinase-202) 3 section were diluted with the ethyl-acetate solution to 20%.

[0027] [Processing of a perforation and half cutting] Subsequently to drawing 1 and drawing 2, in the acceptance section, perforation processing was given [ the acceptance section ] to the pasteboard section for 2 division-into-equal-parts half cutting like the half cutting of the acceptance section, and the acceptance sheet for hot printing was obtained so that it might be shown.

[0028] The acceptance sheet for hot printing was obtained like the example 1 except having not put in example of comparison 1 perforation.

[0029] [Evaluation] When two split screens were printed on the acceptance sheet for hot printing obtained in the example 1 and the example 1 of comparison using the commercial sublimation video printer (the Sony make, tradename:M-1), generating of the trouble within a printer did not have both. Next, although the acceptance sheet of an example 1 was easily separable in the perforation portion when it tried to divide the acceptance sheet for hot printing into plurality by hand without using a tool, the example 1 of comparison was inseparable unless scissors etc. were used. In addition, after dividing, the acceptance section has exfoliated easily from the pasteboard section.

[0030] As a base material for the example 2 [manufacture of the acceptance section] acceptance sections, like the example 1, the acceptance layer was formed

and the acceptance section was obtained on the field of one of these using the foaming PET film (the Toray Industries make, tradename:50E63) with a thickness of 50 micrometers with which the micro void is formed.

[Manufacture of the acceptance sheet for hot printing] The laminating of the acceptance section and the pasteboard section was carried out like the example 1 except having used the above-mentioned acceptance section.

[0031] [Processing of a perforation and half cutting] Subsequently to drawing 3 and drawing 4 , the portion surrounded by the acceptance section by 16 half cutting in the acceptance section was formed so that it might be shown. The portion surrounded by this half cutting is a portion which carries out exfoliation use, after printing a picture. About the perforation, the perforation (covering the acceptance section and the pasteboard section) was given to the whole acceptance sheet so that the seal formed of the aforementioned half cutting might be exactly divided into two at a time.

[0032] The acceptance sheet for hot printing was obtained like the example 2 except having not put in example of comparison 2 perforation.

[0033] [Evaluation] When 16 split screens were printed on the acceptance sheet for hot printing obtained in the example 2 and the example 2 of comparison using the commercial sublimation video printer (the Sony make, tradename:M-1), generating of the trouble within a printer did not have both. Next, although the acceptance sheet of an example 2 was easily separable in the perforation portion when it tried to divide the acceptance sheet for hot printing into plurality by hand without using a tool, the example 2 of comparison was inseparable unless scissors etc. were used. In addition, after dividing, the acceptance section has exfoliated easily from the pasteboard section.

[0034] As a base material for the example 3 [manufacture of the acceptance section] acceptance sections, like the example 1, the acceptance layer was formed and the acceptance section was obtained on the field of one of these using the foaming PET film (the product made from diamond HOIRUHEKISUTO, tradename:W900J-75) with a thickness of 75 micrometers with which the micro void is formed.

[Manufacture of the acceptance sheet for hot printing] The laminating of the acceptance section and the pasteboard section was carried out like the example 1 except having used the above-mentioned acceptance section.

[0035] [Processing of a perforation and half cutting] Subsequently to drawing 5 and drawing 6 , the portion surrounded by the acceptance section by four half cutting in the acceptance section was formed so that it might be shown. The portion surrounded by this half cutting is a portion which carries out ablation use,

after printing a picture. About the perforation, the perforation was given only to the pasteboard section so that the seal formed of the aforementioned half cutting might be exactly divided into one at a time.

[0036] The acceptance sheet for hot printing was obtained like the example 3 except having not put in example of comparison 3 perforation.

[0037] [Evaluation] When the quadrisection screen was printed on the acceptance sheet for hot printing obtained in the example 3 and the example 3 of comparison using the commercial sublimation video printer (the Sony make, tradename:M-1), generating of the trouble within a printer did not have both. Next, as shown in drawing 7 , when the non-used portion 6 of drawing 6 was removed, the perforation 3 appeared the acceptance sheet for hot printing of an example 3.

When it tried to divide the acceptance sheet for hot printing into plurality by hand without using a tool in this state, the acceptance sheet of an example 3 was easily separable in the perforation portion. On the other hand, it was inseparable, unless scissors etc. were used, even if it exfoliated the non-used portion of the acceptance sheet for hot printing of the example 3 of comparison. In addition, after dividing, the acceptance section has exfoliated easily from the pasteboard section.

---

[Translation done.]



**\* NOTICES \***

**Japan Patent Office is not responsible for any damages caused by the use of this translation.**

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

---

---

**DESCRIPTION OF DRAWINGS**

---

---

[Brief Description of the Drawings]

[Drawing 1] It is the flat surface which shows an example of the acceptance sheet for hot printing of this invention.

[Drawing 2] It is cross-section explanatory drawing in A-A of the acceptance sheet for hot printing shown in drawing 1 .

[Drawing 3] It is the flat surface which shows other examples of the acceptance sheet for hot printing of this invention.

[Drawing 4] It is cross-section explanatory drawing in B-B of the acceptance sheet for hot printing shown in drawing 3 .

[Drawing 5] It is the flat surface which shows another example of the acceptance sheet for hot printing of this invention. In addition, although the perforation 3 prepared in the rear face rather than the front face (acceptance section side) was not visible, it was shown in order to explain the relation between half cutting and a perforation.

[Drawing 6] It is cross-section explanatory drawing in C-C of the acceptance sheet for hot printing shown in drawing 5 .

[Drawing 7] It is cross-section explanatory drawing for explaining the state except the portion in which the acceptance sheet for hot printing shown in drawing 6 does not carry out separation use.

[Description of Notations]

- 1: The acceptance sheet for hot printing
- 2: Half cutting
- 3: Perforation
- 4: Acceptance section
- 5: Separation use portion

- 6: A non-used portion
- 7: Pasteboard section
- 8: Surface of separation

---

[Translation done.]

\* NOTICES \*

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

---

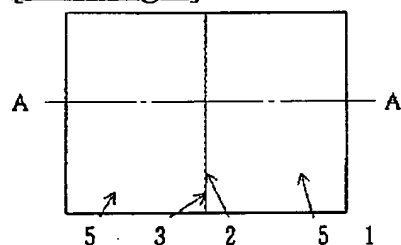
---

DRAWINGS

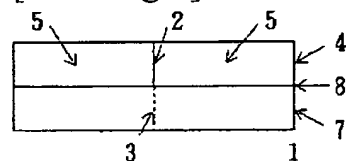
---

---

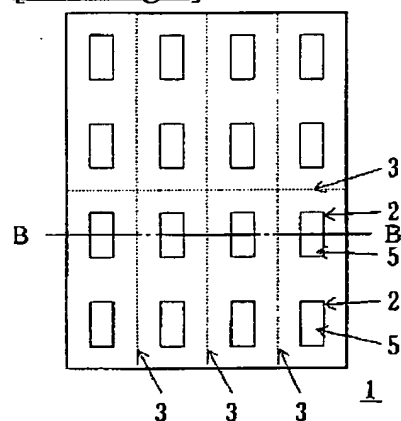
[Drawing 1]



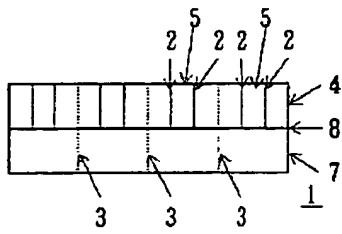
[Drawing 2]



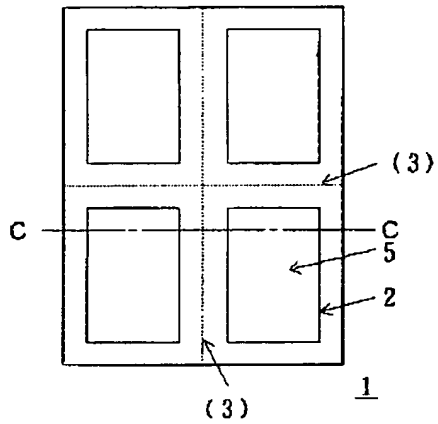
[Drawing 3]



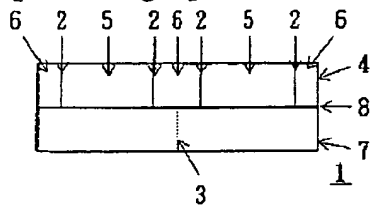
[Drawing 4]



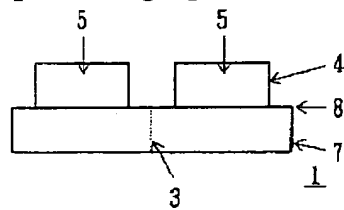
[Drawing 5]



[Drawing 6]



[Drawing 7]



---

[Translation done.]